

QUANTILE TEST
USING UPPER RANGE OF DATA SETS

TABLE 3
STATISTICAL COMPARISON OF BASELINE AND POST-REMEDIATION LEAD CONCENTRATIONS

Distance From Smelter (Miles)	House Number	Address	Two-Population Test ¹					One-Sample Tests ²				Conclusion ⁵
			Quantile Test ³				Hypothesized Mean	Estimated Mean for Property	Parametric t-Test	Nonparametric Signed Rank		
			k (Critical)	r	Prob ⁴	k (Observed)			Conclusion	Prob ⁴	Prob ⁴	
0.20	20	928 Church	3	3	0.043	3	> Baseline	74	98	<0.001	0.017	> Baseline
0.25	1	842 Brown	2	3	0.051	0	NS	74	60	1.000	0.999	NS
0.25	5	407 Burris	3	3	0.043	1	NS	74	75	0.441	0.949	NS
0.25	6	907 Dale	3	3	0.043	3	> Baseline	74	103	<0.001	0.004	> Baseline
0.25	22	824 Brown	4	5	0.038	4	> Baseline	74	99	0.002	0.019	> Baseline
0.25	24	812 Brown	2	3	0.051	2	> Baseline	74	90	0.038	0.113	> Baseline
0.40	12	292 Park	4	5	0.038	N/A (a)	N/A	74	139	0.183	0.963	NS
0.40	13	562 Reservoir	2	2	0.050	2	> Baseline	74	135	<0.001	<0.001	> Baseline
0.40	17	416 Thurwell	3	3	0.043	2	NS	74	78	0.187	0.727	NS
0.40	21	295 Broadway	5	8	0.043	N/A (a)	N/A	74	68	0.976	0.996	NS
0.45	11	525 Joachim	2	2	0.050	2	> Baseline	74	89	0.114	0.605	NS
0.50	2	446 Thurwell	3	5	0.036	2	NS	74	89	0.008	0.006	> Baseline
0.50	14	440 Thurwell	2	3	0.051	0	NS	74	60	1.000	1.000	NS
0.50	15	453 Thurwell	2	5	0.044	0	NS	74	58	1.000	0.996	NS
0.50	16	695 Joachim	3	5	0.036	3	> Baseline	74	94	<0.001	<0.001	> Baseline
0.50	19	407 Hill	3	3	0.043	N/A (a)	N/A	74	70	0.756	0.992	NS
0.54	9	454 Hill	4	6	0.042	5	> Baseline	74	105	<0.001	<0.001	> Baseline
0.60	4	438 Washington	4	6	0.042	0	NS	74	49	1.000	1.000	NS
0.60	18	422 Reservior	4	5	0.050	1	NS	74	72	0.758	0.957	NS
0.75	3	441 Main	4	5	0.050	2	NS	74	60	1.000	1.000	NS
0.75	10	485 St. Joseph	4	6	0.042	0	NS	74	49	1.000	1.000	NS
0.75	23	404 Jefferson	N/A (b)	N/A (b)	N/A (b)	N/A (b)	N/A (b)	74	N/A (b)	N/A (b)	N/A (b)	N/A (b)
0.80	7	434 Sherman	4	5	0.038	1	NS	74	60	1.000	1.000	NS
1.00	8	157 Joachim	4	5	0.038	0	NS	74	52	1.000	1.000	NS

Notes:

1 Test of the one-sided null hypothesis that concentrations in the right-hand tail (upper quantile) of the post-remediation data are less than concentrations in the right hand tail (upper quantile) of the baseline data

2 Test of the one-sided null hypothesis that the mean concentration of the post-remediation data is less than the mean of the baseline data. The one-sided 95 percent upper confidence limit of the baseline mean was used for comparison with the post-remediation data.

3 See methods for detailed discussion of the quantile test

4 Probability associated with test result. If Prob is less than or equal to 0.05 (five percent), then the null hypothesis is rejected

5 Test result is concluded to be significant (> Baseline) if either of the test results yields a probability less than or equal to 0.05 (5 percent)

N/A (a) Not applicable. Test could not be conducted because at least one of the r-largest measurements was below the detection limit.

N/A (b) Not applicable. Test was not conducted because only three samples were available for this property.

NS Result is not significant, the property upper quantile (or mean) is less than or equal to the baseline upper quantile (or mean).

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